



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,429	02/10/2004	Nusrallah Jubran	3216.60US02	9734

24113 7590 11/03/2006

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.  
4800 IDS CENTER  
80 SOUTH 8TH STREET  
MINNEAPOLIS, MN 55402-2100

EXAMINER

NOTE, JANIS L

ART UNIT PAPER NUMBER

1756

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/775,429

Applicant(s)

JUBRAN ET AL.

Examiner

Janis L. Dote

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 and 21-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 21-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/23/06</u> | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1756

1. This office action is responsive to the amendment filed on Sep. 8, 2006. Claims 1-14 and 21-27 are pending.

2. The examiner crossed-out the reference US 4,415,640, listed on the form PTO-1449 filed in the Information Disclosure Statement (IDS) on Oct. 23, 2006, because said reference is already of record. See the examiner-initialed form PTO-149 filed in the IDS on Sep. 27, 2004, which is attached to the office action mailed on Mar. 22, 2005.

The information disclosure statement filed May 2, 2006, fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

Applicants are advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

3. The objections to the specification set forth in the office action mailed on May 4, 2006, paragraph 5, items (3) and (4) have been withdrawn in response to the amended paragraphs at pages 12, 13, and 21, of the specification, filed on Sep. 8, 2006.

4. On further review of US 4,415,460 (Goto), the withdrawal of the rejections under 35 U.S.C. 103(a) over Goto, set forth in the office action mailed on May 4, 2006, was premature. Rejections over Goto are set forth infra.

5. Applicants' claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 1-14 and 21-27

of this application. Provisional Application 60/466,813 (Application'813) does not provide an adequate written description for subject matter recited in the instant claims for the reasons discussed in the office action mailed on Mar. 22, 2005, paragraph 5, which are incorporated herein by reference. Accordingly, the subject matter recited in instant claims 1-14 and 21-27 is accorded benefit only of the filing date, Feb. 10, 2004, of the instant application.

6. The disclosure is objected to because of the following informalities:

(1) The amended paragraph beginning at page 21, line 12, of the specification, set forth in the amendment filed on Sep. 8, 2006, discloses that the solubilizing substituent comprises a  $-(CH_2)_nH$  group where  $n$  is an integer between 1 and 50 and one or more of the methylene groups can be replaced by B or P." However, it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent.

(2) The specification also discloses that the solubilizing substituent comprises a  $-(CH_2)_nH$  group where  $n$  is an integer between 1 and 50 and one or more of the methylene groups can be replaced by B or P. See the amended paragraphs beginning at page 3, line 1, page 8, line 21, and page 20, line 23, of the

Art Unit: 1756

specification, set forth in the amendment filed on Mar. 16, 2006. However, it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent.

Appropriate correction is required.

Applicants' arguments filed on Sep. 8, 2006, regarding the objections in items (1) to (2) above have been fully considered but they are not persuasive.

(1) and (2) Applicants assert that because the "specification clearly indicates that one or more methylene groups can be replaced, one of ordinary skill in the art would recognize that the substituted group would be inserted in the methylene chain in such a way as to provide the appropriate number of bonds to each group." Applicants assert that "no objective evidence is needed on this point, since clearly one of ordinary skill in the organic synthesis art would recognize that a substituted B or P would have to be inserted in a way to provide the appropriate number of bonds to the group." Applicants further assert that "[t]he specification need not disclose what is well known to those skilled in the art . . . ." See MPEP 2164.05(a)." Applicants refer to pages 404-405 of Chemistry & Chemical Reactivity by John C. Kotz, "which provide the basic rules for drawing molecular structures." Applicants assert that "when necessary an atom pair can be converted to

Art Unit: 1756

another bond . . . Hence, one skilled in the chemical arts would know to provide the appropriate number of bonds."

Applicants' assertions are not persuasive. Applicants did not provide a copy of pages 404 and 405 of Chemistry & Chemical Reactivity. Moreover, even if applicants had provided a copy of said pages, a person having ordinary skill in the chemical arts would not have known what groups applicants intended to be bonded to B and P such that the substituted B and P are divalent. The instant specification provides no guidance to a person having ordinary skill in the art as to what groups are bonded to B and P to render the substituted B and P divalent. The instant specification merely discloses that one of the methylene groups in the group  $-(CH_2)_nH$  can be replaced by N, C, B, Si, P, or a "CR<sub>b</sub> group." The instant specification at page 10, lines 22-24, which states that "[t]he term group indicates the generically recited chemical entity (e.g., alkyl group . . . ) may have any substituent thereon which is consistent with the bond structure of that group . . . no substitution would include within the term that would alter the fundamental bond structure of the underlying group." The instant specification at page 11, lines 6-7, discloses that "[w]hen the term moiety is used, such as alkyl moiety or phenyl moiety, that terminology includes that the chemical moiety is

Art Unit: 1756

not substituted." Thus, B and P cannot be substituted "in such a way as to provide the appropriate number of bonds" as asserted by applicants, because the substitution would alter the fundamental bond structure of B and P. Accordingly, as discussed in the office action mailed on Dec. 14, 2005, given the plain language of the objected disclosure in the instant specification, a person having ordinary skill in the art would conclude that the disclosure of the replacement of the divalent methylene group with B or P was in error. A person having ordinary skill in the art would not have known what is meant by the disclosure of replacing a  $\text{-CH}_2\text{-}$  with the non-divalent groups B or P. "The meaning of every term used in a claim should be apparent from the prior art or from the specification and drawings at the time the application is filed." Applicants are "required to make clear and precise the terms that are used to define the invention whereby the metes and bounds of the claimed invention can be ascertained." MPEP 2173.05(a)I (8<sup>th</sup> edition, Rev. 5, Aug. 2006).

Accordingly, for the reasons discussed above, the objections stand.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:



Art Unit: 1756

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-14 and 21-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Instant claims 1, 8, and 21 are indefinite in the phrase "the solubilizing substituent comprises a  $-(CH_2)_nH$  group where  $n$  is an integer between 1 and 50, and one or more of the methylene groups is optionally replaced by a . . . B, P . . ." because it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent.

Instant claim 25 is further indefinite in the phrase " $R_7$  comprises a  $-(CH_2)_nH$  group where  $n$  is an integer between 1 and 50, and one or more of the methylene groups is optionally replaced by a . . . B, P . . ." because it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent.

Applicants' arguments filed on Sep. 8, 2006, have been fully considered but they are not persuasive for the reasons discussed in paragraph 6, items (1) and (2) above.

Art Unit: 1756

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1-14 and 21-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Instant claims 1, 8, 21, and 25 recite that in the charge transport compound formula, the symbol X is "a p-N,N-diphenylaminophenylene group."

The originally filed specification does not provide an adequate written description of said symbol X. The originally filed specification at page 22 exemplifies two particular charge transport compounds that are represented by the chemical formulas recited<sup>o</sup> in instant claims 1, 8, 21, and 25, when the symbol X is p-N,N-diphenylaminophenylene. The term "a p-N,N-diphenylaminophenylene group" is broader than the

disclosed p-N,N-diphenylaminophenylene moiety because it encompasses substituted p-N,N-diphenylaminophenylene groups. See the originally filed specification at page 10, lines 22-24, which states that "[t]he term group indicates the generically recited chemical entity (e.g., alkyl group . . . ) may have any substituent thereon which is consistent with the bond structure of that group" (emphasis added).

Applicants' arguments filed on Sep. 8, 2006, have been fully considered but they are not persuasive.

Applicants assert that the term "p-N,N-diphenylaminophenylene group" is not broader than what has been disclosed and described in the instant specification. Applicants assert that the specification at pages 3, 20, and 21, refer to "X as comprising an arylamine group such as a p-N,N-disubstituted)arylamine *group*" (emphasis in the original). Applicants assert that p-N,N-diphenylaminophenylene group is an example of such a p-(N,N-disubstituted)arylamine group. Applicants further assert that the structures provided at page 22 are "non-limiting examples."

Applicants' assertions are not persuasive. For the reasons discussed in the rejection, the originally filed specification only provides an adequate written description of the species "p-N,N-diphenylaminophenylene" moiety. There is no description

Art Unit: 1756

of the sub-genus "p-N,N-diphenylaminophenylene group," which includes substituted p-N,N-diphenylaminophenylenes, such as p-N,N-di-(4-chlorophenyl)aminophenylene. The disclosed single species "p-N,N-diphenylaminophenylene" does not provide an adequate written description for the broad sub-genus "p-N,N-diphenylaminophenylene group" recited in the instant claims. Accordingly, the rejection stands.

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claims 1, 21, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,415,640 (Goto).

Goto discloses an electrophotographic organic photoreceptor comprising an electrically conductive substrate and a light-sensitive layer comprising a charge generating material and a charge transport material represented by formula (I) disclosed at col. 3, lines 20-42. See col. 3, lines 13-47; col. 7, lines 23-33; and col. 8, line 53, to col. 9, line 3.

Goto teaches that the charge transport material of formula (I) can be represented by compounds (6) to (8) at col. 4.

Compounds (6) to (8) meet the limitations of the formula recited in instant claims 1, 21, and 25, except for the 9-fluorenylidene

Art Unit: 1756

group comprising a substituent as recited in the instant claims. The underlined hydrogen attached to the carbon in the group  $-\underline{\text{C}}\text{H}=\text{N}-\text{N}=\text{}$  in the Goto compounds (6) to (8) meets the group R of the formula recited in the instant claims. The p-N,N-diphenylaminophenylene groups attached to underlined carbon atom in the group  $-\underline{\text{C}}\text{H}=\text{N}-\text{N}=\text{}$  in Goto compounds (6) to (8) meets the p-N,N-diphenylaminophenylene group recited in the instant claims.

As discussed supra, the 9-fluorenylidene group in the Goto compounds (6) to (8) do not have a substituent as recited in the instant claims.

However, Goto discloses that compounds (6) to (8) represent formula (I) disclosed at col. 3, lines 20-47. Goto teaches that both benzene rings in the 9-fluorenylidene group are substituted with the groups X and Y, respectively, where the X and Y groups can be hydrogen, a halogen, an alkyl group having preferably from 1 to 8 carbon atoms, an amino group, or an alkoxy group having preferably 1 to 8 carbon atoms. Col. 3, lines 43-47, and compounds (9), (10), and (12) at col. 5. The Goto compounds (6) to (8) meet the substituted 9-fluorenylidene limitation recited in instant claims when one of the benzene rings in the 9-fluorenylidene group in compounds (6) to (8) is substituted with an alkyl group having 1 to 8 carbon atoms or an alkoxy group having 1 to 8 carbon atoms as taught by Goto. The

Art Unit: 1756

alkyl group having 1 to 8 carbon atoms meets the substituent group  $-(CH_2)_nH$ , when  $n$  is an integer of 1 to 8 recited in the instant claims. The alkoxy group having 1 to 8 carbon atoms, such as  $-OCH_3$ , meets the substituent group  $-(CH_2)_nH$ , when  $n$  is 2-9, and the first methylene group is replaced with the group  $-O-$ .

According to Goto, the charge transport compound of formula (I) disclosed at col. 3, lines 20-47 has excellent compatibility with binder resins and carrier transportability and is stable against heat and light. Col. 2, lines 49-55. Goto further discloses that an organic photoreceptor comprising said charge transport compound has higher sensitivity, less residual potential, and excellent durability, i.e., maintains stable electrophotographic characteristics over an extensive period of time. Col. 2, line 62, to col. 3, line 5.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Goto, to substitute one of hydrogen atoms on one of the benzene rings in the 9-fluorenylidene group in the Goto compounds (6) to (8) with an alkyl having 1 to 8 carbon atoms or an alkoxy having 1 to 8 carbon atoms substituent group, which are taught by Goto, such that the resultant charge transport compounds are within the compositional limitations of the formula recited in instant

Art Unit: 1756

claims. It would have also been obvious for that person to use the one of the resultant compounds as the charge transport material in the organophotoreceptor disclosed by Goto. That person would have had a reasonable expectation of successfully obtaining a charge transporting material and an organic photoreceptor having the benefits disclosed by Goto.

13. Claims 7, 8, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,430,526 (Ohkubo) combined with Goto.

Ohkubo discloses an electrophotographic image forming apparatus comprising all the components recited in instant claims 8 and 14, but for the particular photoreceptor. Fig. 1 and col. 2, line 56, to col. 3, line 56. The apparatus shown in Fig. 1 comprises an electrophotographic photosensitive drum 3, contact charging member 4, an exposure unit that comprises a laser beam L, and a developing unit 5 that comprises a toner. The photosensitive drum meets the drum limitation recited in instant claim 7.

Ohkubo does not disclose the use of the photoreceptor recited in the instant claims. However, Ohkubo does not limit the type of photoreceptor used. See reference claim 1.

Art Unit: 1756

Goto renders obvious an electrophotographic organic photoreceptor comprising a photosensitive layer as described in paragraph 12 above, which is incorporated herein by reference. As discussed in paragraph 12 above, Goto teaches that an organic photoreceptor comprising the Goto charge transport compound has higher sensitivity, less residual potential, and excellent durability, i.e., maintains stable electrophotographic characteristics over an extensive period of time. Col. 2, line 62, to col. 3, line 5.

It would have been obvious for a person having ordinary skill in the art to use the photosensitive layer rendered obvious over the teachings of Goto as the photosensitive layer on the conductive drum in the apparatus disclosed by Ohkubo. That person would have had a reasonable expectation of successfully obtaining an electrophotographic apparatus that has higher sensitivity, less residual potential, and excellent durability over an extensive period of time.

14. Claims 4 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goto as applied to claims 1 and 21 above, further combined with additional teachings in Goto.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo combined with Goto as applied to



Art Unit: 1756

claim 8 above, further combined with additional teachings in Goto.

Goto renders obvious an electrophotographic organic photoreceptor and a charge transport material as described in paragraph 12 above, which is incorporated herein by reference.

Okhubo combined with Goto renders obvious an electrophotographic imaging apparatus as described in paragraph 13 above, which is incorporated herein by reference.

The Goto charge transport compound rendered obvious over the teachings of Goto described in paragraphs 12 and 13 above meets the compositional limitations of the formula recited in instant claims 4, 11, and 24, except for the 9-fluorenylidene group comprising a substituent as recited in instant claims 4, 11, and 24.

However, as discussed in paragraphs 12 and 13 above, Goto discloses that compounds (6) to (8)) represents formula (I) disclosed at col. 3, lines 20-47. Goto teaches that both benzene rings in the 9-fluorenylidene group are substituted with the groups X and Y, respectively, where the X and Y groups can be a substituted amino, a halogen, an alkyl group, an amino group, or an alkoxy group. Col. 3, lines 43-47, and compounds (10) and (12) at col. 5. The Goto compounds (6) to (8) meet the substituted 9-fluorenylidene limitation recited

Art Unit: 1756

in instant claims 4, 11, and 24, when the one of the benzene rings in the 9-fluorenylidene group in the Goto compounds (6) to (8) is substituted with an alkyl having 1 to 8 carbon atoms or an alkoxy having 1 to 8 carbon atoms, as taught by Goto, and the other benzene ring in the 9-fluorenylidene group in compounds (6) to (8) is substituted with a halogen, such as chlorine or bromide as shown in compounds (10) and (12), or an alkyl group, a substituted or unsubstituted amino group, a hydroxyl group, or an alkoxy group, as taught by Goto.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Goto, to substitute one of hydrogen atoms on one of the benzene ring in the 9-fluorenylidene group in the Goto compounds (6) to (8) with an alkyl having 1 to 8 carbon atoms or an alkoxy having 1 to 8 carbon atoms substituent group and to further substitute one of hydrogen atoms on the other benzene ring in the 9-fluorenylidene group with a halogen, an alkyl, an alkoxy, or a substituted or unsubstituted amino group, a hydroxyl group, or an alkoxy group as taught by Goto, such that the resultant charge transport compounds are within the compositional limitations of the formula recited in the instant claims 4, 11, and 24. It would have also been obvious for that person to use the one of resultant compounds as the charge transport material in the

Art Unit: 1756

organophotoreceptor disclosed by Goto and in the imaging apparatus rendered obvious over the combined teachings of Ohkubo and Goto. That person would have had a reasonable expectation of successfully obtaining a charge transporting material, an organic photoreceptor, and an electrophotographic imaging apparatus having the benefits disclosed by Goto.

15. Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,528,645 B1 (Hamasaki) combined with Goto.

Hamasaki discloses a single-layered organic photoreceptor comprising an electrically conductive substrate and a photosensitive layer comprising particular titanyl phthalocyanine crystals, an electron transferring compound, and a hole transferring compound. Col. 3, lines 54-57; and, for example, example 1 at col. 23, line 65, to col. 24, line 17. The electron transferring compound meets the electron transporting compound recited in instant claim 6. According to Hamasaki, the single-layered organic photoreceptor has good sensitivity characteristics "that are always stable regardless of the lapsed time after preparing the coating solution" comprising said titanyl phthalocyanine crystals. Col. 3, lines 64-67, and Table 2, example 1.

Art Unit: 1756

Hamasaki does not exemplify a single-layered organic photoreceptor comprising the charge transport compound recited in the instant claims. However, Hamasaki discloses that as the hole, i.e., charge, transferring material, "there can be used any of various hole transferring compounds which have conventionally been known," such as hydrazones. Col. 13, lines 11-13; and col. 14, line 3.

Goto renders obvious a hydrazone, i.e., an azine, charge transport compound that meets the compositional limitations of the formula recited in instant claim 1. The discussion of the Goto compound in paragraph 12 above is incorporated herein by reference. According to Goto, the Goto charge transport compound has excellent compatibility with binder resins and carrier transportability and is stable against heat and light. Col. 2, lines 49-55. Goto also teaches that an organic photoreceptor, such as a single-layered photoreceptor, comprising said charge transport compound has higher sensitivity, less residual potential, and excellent durability, i.e., maintains stable electrophotographic characteristics over an extensive period of time. Col. 2, line 62, to col. 3, line 5; col. 7, lines 39-45; and Figs. 5 and 6.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Goto, to use the

Art Unit: 1756

charge transport compound rendered obvious over the teachings of Goto as the hole transferring compound in the single-layered organic photoreceptor disclosed by Hamasaki. That person would have had a reasonable expectation of successfully obtaining a single-layered electrophotographic organic photoreceptor having higher sensitivity, less residual potential, and excellent durability, as disclosed by Goto.

16. Claims 7, 8, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo combined with Hamasaki and Goto.

Ohkubo discloses an electrophotographic image forming apparatus comprising all the components recited in instant claims 8 and 12-14, but for the particular photoreceptor. The discussion of Ohkubo in paragraph 13 above is incorporated herein by reference.

Ohkubo does not disclose the use of the photoreceptor recited in the instant claims. However, Ohkubo does not limit the type of photoreceptor used. See reference claim 1.

Hamasaki combined with the teachings of Goto renders obvious a single-layered organic photoreceptor comprising a photosensitive layer as described in paragraph 15 above, which is incorporated herein by reference. The photoreceptor meets

Art Unit: 1756

the compositional limitations recited in instant claims 7, 8, and 12-14.

It would have been obvious for a person having ordinary skill in the art to use the photosensitive layer rendered obvious over the combined teachings of Hamasaki and Goto as the photosensitive layer on the conductive drum in the apparatus disclosed by Ohkubo. That person would have had a reasonable expectation of successfully obtaining an electrophotographic apparatus having the benefits disclosed by both Hamasaki and Goto, i.e., good sensitivity characteristics, less residual potential, and excellent durability.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Art Unit: 1756

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLD

Oct. 27, 2006

  
JANIS L. DOTE  
PRIMARY EXAMINER  
GROUP 1500  
1700